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BUR.089

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REMARKS

Applicant respectfully submits that entry of this §1.116 Amendment is proper. Since the amendments above narrow the issues for appeal and merely clarify the subject matter of the claims. Applicant further respectfully submits that such amendments do not raise a new issue requiring a further search and/or consideration by the Examiner. As such, entry of this §1.116 Amendment is earnestly solicited.

Applicant gratefully acknowledges the indication by the Examiner that claims 40-42 would be allowable if rewritten in independent form. (Please see, Office Action, page 3, last line to page 4, line 3). By this Amendment, the subject matter of claim 40 is added to its base claim to rewrite independent claim 1, the subject matter of claim 41 is added to its base claim to rewrite independent claim 12, and the subject matter of claim 42 is added to its base claim to rewrite independent claim 23. Further, as explained below, independent claims 1, 12, and 23 are amended to respond to the rejection of these claims under 35 U.S.C. §112, first paragraph. Therefore, independent claims 1, 12, and 23 and claims 2-11, 13-22, and 24-39 should be allowable.

Claims 1-39 are pending in the application. By this Amendment, independent claims 1, 12, and 23 are currently amended. Claims 40-42 are canceled without prejudice or disclaimer. No new matter is added to currently amended claims 1, 12, and 23. Claims 1, 12, and 23 are currently amended to merely clarify the subject matter of the claims and in no way narrow the scope of the claims in order to overcome the prior art or for any other statutory purpose of patentability.

Notwithstanding any claim amendments of the present Amendment or those amendments that may be made later during prosecution, Applicant's intent is to encompass equivalents of all claim elements. Reconsideration in view of the foregoing amendments and the following remarks is respectfully requested.

Claims 1-42 stand rejected under 35 U.S.C. §112, first paragraph.

Claims 1-36 are rejected under 35 U.S.C. §102(b) as anticipated by Chapple-Sokol et al.

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(U.S. Patent No. 5,465,859).

These rejections are respectfully traversed in view of the following discussion.

I. THE CLAIMED INVENTION

The claimed invention, as defined in independent claim 1, is directed to a method of etching a substrate comprising measuring a reflectance signal from a reflective material deposited on the substrate as the substrate is being etched, correlating a substrate etch rate to the reflectance signal from the reflective material, and using an etch relation between the substrate and the reflective material to determine an etch target, in which the reflective material is isolated from an etching process, in which the etch relation is determined by a ratio of etch rates between a metal oxide and the substrate, and in which the etch target is determined before the metal oxide is completely removed.

The claimed invention, as defined in independent claim 12, is directed to a method of etching a material comprising measuring a reflectance signal from a correlation material that is removed from the path of a second material that is to be etched as the second material is etched, correlating a second material etch rate to the reflectance signal from the correlation material, and using an etch ratio between the correlation material and the second material to determine an etch target, in which the correlation material is isolated from an etching process, in which the etch ratio is determined by a ratio of etch rates between a metal oxide and the second material, and in which the etch target is determined before the metal oxide is completely removed.

The claimed invention, as defined in independent claim 23, is directed to a method of etching a semiconductor substrate comprising measuring a reflectance signal from an opaque material deposited on the semiconductor substrate as the semiconductor substrate is being etched, correlating the semiconductor substrate etch rate to the reflectance signal from the opaque material, and using an etch relation between the semiconductor substrate and the opaque material to determine an etch target, in which the opaque material is isolated from an etching process, in which the etch relation is determined by a ratio of etch rates between a metal oxide and the semiconductor substrate, and in which the etch target is determined before the metal oxide is

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completely removed.

The conventional methods, such as those discussed in the Related Art section of the present application, fail to provide for such an operation nor do they have such a structure.

II. THE 35 U.S.C. §112, FIRST PARAGRAPH, REJECTION

Claims 1-42 stand rejected under 35 U.S.C. §112, first paragraph, for allegedly containing new matter in the phrase "wherein the etch relation is determined by a rate of a metal oxide etch." The Examiner kindly points out that there is basis for using an etch rate ratio, but not for using a single etch rate to determine the etch relation.

Independent claims 1, 12, and 23 are amended, above, to recite in relevant part "wherein the etch relation is determined by a ratio of etch rates between a metal oxide and the substrate," "wherein the etch ratio is determined by a ratio of etch rates between a metal oxide and the second material," and "wherein the etch relation is determined by a ratio of etch rates between a metal oxide and the semiconductor substrate," respectively.

For at least the reasons outlined above, Applicant respectfully submits that claims 1, 12, and 23, and claims 2-11, 13-22, and 24-39, which depend from claims 1, 12, and 23, fulfill the requirements of 35 U.S.C. §112, first paragraph. This Amendment cancels claims 40-42 without prejudice or disclaimer; hence, the rejection of claims 40-42 is moot. Withdrawal of the rejection of claims 1-42 under 35 U.S.C. §112, first paragraph is respectfully solicited.

III. THE PRIOR ART REJECTION

Following the Prior Art Rejection of the Office Action, the Examiner kindly indicates that claims 40-42 would be allowable if rewritten in independent form. (Please see, Office Action, page 3, last line to page 4, line 3). By this Amendment, the subject matter of claim 40 is added to its base claim to rewrite claim 1 in independent form, the subject matter of claim 41 is added to its base claim to rewrite claim 12 in independent form, and the subject matter of claim 42 is added to its base claim to rewrite claim 23 in independent form. Further, as explained directly above, independent claims 1, 12, and 23 are amended to respond to the rejection of these claims

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under 35 U.S.C. §112, first paragraph. Therefore, independent claims 1, 12, and 23 and claims 2-11, 13-22, and 24-39, which depend from claims 1, 12, and 23 should be allowed.

IV. CONCLUSION

In view of the foregoing, Applicant submits that claims 1-39, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

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The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to the assignee's Deposit Account No. 09-0456.

Respectfully Submitted,

Date: 10/27/03

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CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that I am filing this Amendment by facsimile with the United States Patent and Trademark Office to Examiner Anita Karen Alanko, Group Art Unit 1765 at Official Facsimile Number (703) 872-9311 this 27th day of October, 2003.

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